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SHORT REPORT

Superficial Thrombophlebitis in Varicose Veins Caused by Inflight Stockings

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We report a case of superficial thrombophlebitis following air travel when inflight stockings were worn. Stockings could be an aetiological factor in superficial thrombophlebitis in varicose veins by causing vascular stasis and trauma due to a tourniquet effect at the top of the stockings.

Keywords: Superficial thrombophlebitis; Inflight stockings; Varicose veins; Tourniquet effect; Vascular stasis.

Introduction

Superficial thrombophlebitis is inflammation affecting a superficial vein with the presence of a blood clot.[1] The underlying pathological process can be explained by Virchow's triad of vascular stasis, endothelial injury and hypercoagulability.[1] Thrombophlebitis has been reported following air travel when inflight stockings were worn.[2] This case report raises the suspicion that stockings are an aetiological factor in superficial thrombophlebitis in varicose veins by causing vascular stasis and trauma due to a tourniquet effect at the top of the stockings.

Case Report

A 69-year-old lady had a thirty year history of a single prominent varicose vein running down the lateral aspect of her right leg. This was asymptomatic and appeared after the birth of her first child. She took a 2 h flight to Spain for a holiday in June, 2003 and wore below-knee inflight compression stockings for 4 h. She felt these stockings to be quite tight on her legs. After spending 3 weeks in Spain, on her way back she had these stockings on for almost 7 h as she had to wait at the airport for the flight. The day after her return to UK, she started feeling a burning sensation in her leg over the existing varicose vein and also noticed some reddening around that area, extending from just below the knee to half way down the lateral aspect of the right leg.

Previously, she never used inflight stockings for air travel and had no problems with her varicose vein. Her past medical history included arthritis in both ankles for 18 months, with no history of deep vein thrombosis, diabetes mellitus or ischaemic heart disease. There was no family history of deep vein thrombosis or hypercoagulability state.

She went to see her general practitioner and on examination she had a tender and cord-like superficial vein on the outer aspect of her right leg. The overlying skin was reddish and warmer than the adjacent leg skin. She was afebrile and her heart rate was normal. There was no clinical evidence of deep vein thrombosis.

She was diagnosed as having superficial thrombophlebitis and was advised to take rest, ibuprofen and a 7 day course of oral penicillin. She was referred to our outpatient clinic for further surgical opinion.

In the outpatient clinic, the patient was found to have recovered fully and she decided not to have any

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surgical intervention. There was no suggestion of hypercoagulability on history or examination.

Discussion

Superficial thrombophlebitis is an inflammation of a superficial vein with the presence of a clot in the vein, characterized by a painful and tender cord-like superficial vein associated with redness and swelling.[1] The objective of this report is to highlight superficial thrombophlebitis in varicose veins as a possible complication of inflight stockings.

Scurr *et al.* studied 231 volunteers over 50 years of age undertaking flights of over 8 h duration from UK and return flights within 6 weeks. Volunteers were randomized to wear or not wear inflight compression stockings.[2] Out of 115 who wore the stockings, 45 had varicose veins before flying, and 4 of these developed superficial thrombophlebitis. Of the 116 without stockings, 41 had varicose veins; none of these developed superficial thrombophlebitis.

In this case, the patient said that the stocking was tight on her calf. We believe this tourniquet effect led to trauma and venous stasis and subsequently superficial thrombophlebitis. Consequently, the wearing of inflight compression stockings may be a rare cause of superficial thrombophlebitis which may predispose to deep vein thrombosis in up to 42% of cases.[3]

There is considerable public concern about deep vein thrombosis occurring during flights and patients in our outpatient clinic frequently enquire about wearing inflight stockings. By identifying this possible complication, we may be better able to discuss the benefits and risks of wearing the inflight compression stockings with our patients.

Whilst we emphasize that we remain in favour of the use of inflight stockings during air travel, they are not without risk. A similar patient can benefit from duplex scanning and anticoagulant therapy in case of deep vein involvement. This is also of value when the patient is flying next time. We also believe that it may be logical to recommend passengers with varicose veins to wear full leg length stockings to prevent deep vein thrombosis and superficial thrombophlebitis when they fly.

Conclusion

Inflight stockings may be a rare cause of superficial thrombophlebitis in varicose veins but should be worn for prophylaxis against deep vein thrombosis.

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